

medical device. Such a method can include selecting an appropriate material as a major component of a sheath and/or container. This can include selecting the major component material from polyethylene, high density polyethylene, or the like as described herein. In any event, the major component material can be a material that does not contribute to the generation of static electricity. The method can then include selecting an antistatic material to be a minor component of the sheath and/or container. This can also include selecting an effective amount of antistatic material so as to inhibit the generation of static electricity in the medical device during storage, transportation, and preparation for use. The sheath and/or container can be formed from at least the major component material and minor component antistatic material. Also, the medical device, which can optionally also include an antistatic material, can then be packaged in the sheath and/or container and sterilized. The sterilization process can include any well known process such as ethylene oxide ("ETO") flushing, gamma radiation, UV radiation, ozone flushing, heat-baking, autoclaving, and the like.

[0112] In another embodiment, the present invention can include a method of reducing particulate matter on a medical device. Such a method can include forming a medical device, sheath, and/or container to include an effective amount of an antistatic material distributed within a major component material that does not contribute to static generation. The method also includes packaging the medical device in the sheath, and inserting the sheath in the container. The medical device and sheath can be sterilized at any time, which can include before or after being inserted within the container. Thus, withdrawal of the medical device from the sheath and/or container can have reduced static electricity generation.

[0113] Additionally, it should be recognized that although the present invention has been generally described in connection with an elongate medical device, such as an endoscope or catheter, it is contemplated that the sheath and/or container could be configured for and utilized with other types of medical devices where there is a desire to reduce the formation of static electricity. For example, packing trays for medical devices may be prepared from the majority component materials and/or antistatic materials as described herein. This can serve to reduce the formation of static electricity formation when any type of medical device is removed from its packaging.

EXAMPLES

Example 1

[0114] A series of experiments were conducted to determine the effect of an antistatic material for inhibiting the generation of static electricity. More particularly, the experiments were performed to demonstrate medical devices disposed within antistatic sheaths can attract less foreign material compared to ordinary sheaths. Briefly, the experiments included the following: (a) collect dust particles; (b) pack one catheter in a standard HDPE sheath and another in an antistatic sheath; (c) remove each catheter from its corresponding sheath; (d) place a portion of each catheter into the dust particles; and (e) evaluate the amount of dust adhering to each catheter. Accordingly, the foregoing experimental protocol showed much less dust to be attracted to and collect

on the antistatic catheter in comparison to the standard catheter. Thus, antistatic materials can be useful to help retain catheter sterility during the preparation of using the same.

[0115] In accordance with the present invention there is provided a process for reducing particulate matter on a medical device due to the formation of a static charge on the medical device. In accordance with the process of the present invention, a material or materials, having good anti-static properties are chosen for the formation of packaging for a medical device. After selecting a material, packaging for the medical device is formed from the material(s) and a medical device is disposed within the packaging. The device remains within the packaging until use.

[0116] Although the present invention has been described in accordance with the methods, processes or packaging embodiments described above for reducing the formation of a static electricity charge on the medical device when it is removed from the packaging, it shall be understood that the processes and methods disclosed herein may be utilized to manufacture medical devices having improved anti-static properties. Wherein, the device would be manufactured of the material(s) described above which exhibit good anti-static properties, therefore the formation of a static charge on the device would be reduced or eliminated.

[0117] It is further contemplated that although the packaging and methods in accordance with the present invention has been described as being utilized for medical devices that are to be used internally within a patient's body, it is contemplated that the packaging and methods according to the present invention may be used for medical devices that may be utilized for other procedures, for example, devices that are used topically.

[0118] The present invention may be embodied in other specific forms without departing from its spirit or essential characteristics. The described embodiments are to be considered in all respects only as illustrative and not restrictive. The scope of the invention is, therefore, indicated by the appended claims rather than by the foregoing description. All changes which come within the meaning and range of equivalency of the claims are to be embraced within their scope.

[0119] Although the present invention has been described in connection with the preferred form of the device and methods of practicing it and modifications thereto, those of ordinary skill in the art will understand that many other modifications can be made thereto within the scope of the claims that follow. Accordingly, it is not intended that the scope of the invention in any way be limited by the above description, but instead be determined entirely by reference to the claims that follow.

What is claimed is:

1. A medical device storage apparatus, the apparatus comprising:

a housing having an outer end and an inner end;

in the housing at least two recesses each configured for releasably retaining an elongate packaging tube in at least a double coil orientation so that a coil passes through each one of the recesses, the recesses being substantially parallel with respect to each other; and